

Claims

1. A composition comprising an aqueous solution of 0.1-20 wt.% of a poly(amine) and 0.1 to 50 wt.% of a carboxylated carbohydrate having an average molecular weight of at least 100,000 D and a degree of carboxyl substitution of at least 5%, which carboxylated carbohydrate has been obtained by subjecting a corresponding original carbohydrate to an oxidation treatment whereby carboxyl and aldehyde groups are obtained by oxidation of hydroxyl groups of the original carbohydrate, after which the oxidised carbohydrate so obtained is contacted with a reducing agent whereby at least part of the aldehyde groups that were obtained in the oxidation treatment are reduced to hydroxymethyl groups, whereby the carboxylated carbohydrate comprises at least part of the reducing agent and/or its reaction product(s), and wherein the carboxylated carbohydrate forms a complex with the poly(amine).
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2. A composition according to claim 1, wherein at least part of the carboxyl groups present in the carboxylated carbohydrate are obtained by carboxylation of the original carbohydrate.
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3. A composition according to claim 1 or 2, wherein the carboxylated carbohydrate has a degree of aldehyde substitution in the range of from 0.1 to 20%.
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4. A composition according to any one of claims 1-3, wherein the poly(amine) comprises polyvinylamine.
5. A composition according to any one of claims 1-4, wherein the carboxylated carbohydrate comprises an α -1,3/1,6- or α -1,4/1,6-glucan.
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6. a composition according to any one of claims 1-5, wherein the carboxylated carbohydrate comprises a starch.

7. A composition according to any one of claims 1-6, wherein the 5 carboxylated carbohydrate comprises at least 20% of the reducing agent used in the reduction treatment.

8. A composition according to any one of claims 1-7, wherein the reducing agent comprises a borohydride.

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9. A composition according to any one of claims 1-8, wherein the carboxylated carbohydrate comprises carbonyl and/or aldehyde groups, which are obtained by oxidation of primary hydroxyl groups.

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10. A composition any one of claims 1-9, wherein the carboxylated carbohydrate comprises carboxyl and/or aldehyde groups, which are obtained by oxidation of secondary hydroxyl groups.

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11. A composition according to any one of claims 1-10, wherein the carboxylated carbohydrate is chemically crosslinked.

12. A composition according to 11, wherein the carboxylated carbohydrate is crosslinked with a dihydrazide.

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13. Use of the composition according to any one of claims 1-12 for the preparation of a fibrous product, film, coating, foil or capsule.

14. Use of the composition according to any one of claims 1-12 for preparing fibres that comprise a poly(amine) and a carboxylated carbohydrate

having an average molecular weight of at least 100,000 D and a degree of carboxyl substitution of at least 5%.

15. Fibres made from the composition according to any one of claims 1-12.

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16. Use of the composition according to any one of claims 1-12 as a binder, thickener or a rheology modifier in a coating, ink or adhesive.

17. Use of the composition according to any one of claims 1-12 as a binder, thickener or a rheology modifier in a coating.

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18. Use of the composition according to any one of claims 1-12 as a paper product additive.

19. A composition comprising fibres according to claim 15.

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20. Use of the fibres according to claim 15 to prepare a composition which comprises fibres.

21. Paper product comprising fibres according to claim 15.

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22. Use of the fibres according to claim 15 to prepare a paper product which comprises fibres.